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UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,826	08/18/2003	Marco Wirasinghe	42P15529	7008

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EXAMINER
MCLEAN MAYO, KIMBERLY N

ART UNIT	PAPER NUMBER
2187	

DATE MAILED: 06/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/643,826	WIRASINGHE ET AL.
	Examiner	Art Unit	
	Kimberly N. McLean-Mayo	2187	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 April 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

U.S. Patent and Trademark Office

PTOL-326 (Rev. 7-05)   Office Action Summary   Part of Paper No./Mail Date 20060614

DETAILED ACTION

1.   The enclosed detailed action is in response to the Amendment submitted on April 18,

2006.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3.   Claims 1-33 are rejected under 35 U.S.C. 102(e) as being anticipated by Nicholson et al.

(PGPUB: US 2004/0153694).

Regarding claims 1-2, Nicholson discloses requesting an operating system to place a computer

system in a hibernation mode (refer to Figure 7, the system determines whether it is entering

hibernation, this determination is intrinsically in response to a stimuli of some sort requesting

that the system enters hibernation, furthermore, since the operating system controls the allocation

and usage of hardware resources, it is evident that the operating system receives such

stimuli/request); gathering a state of the computer system (Figure 7, Reference 710); storing the

system state to a first non-volatile memory of the computer system (Figure 7, Reference 712),

and storing the system state to a second non-volatile memory of the computer system (Figure 7,

Reference 714).

Regarding claim 3, Nicholson discloses the first non-volatile memory has a storage capacity

between 50-2000 megabytes (section [0042]), wherein the second non-volatile memory has a

greater storage capacity than the first non-volatile memory (section [0004]; the remote boot

server contains a hard disk drive and the smallest size of such a drive is 30 GB).

Regarding claim 4, the first non-volatile memory is logically coupled to the second non-volatile

memory (section [0038], 2nd column, lines 9+, the second non-volatile memory is coupled to the

first via References 171, 170, 121, and 222 in Figure 1).

Regarding claim 5, Nicholson discloses powering off the computer (Figure 7, Reference 708).

Regarding claim 6, Nicholson discloses powering on the computer system (section [0055], lines

16+); and loading the system state from the first non-volatile memory (Figure 9, step 806).

Regarding claim 7, Nicholson discloses the system state comprising contents of central

processing unit (section [0052], lines 1-6; the system saves all information required to restore the

system, since the central processing unit performs all of the processing for the system [section

[0039], it is evident that the state of the cpu or contents of the cpu are required for storage when

the system hibernates in order to ensure that the processing unit may resume processing).

Regarding claim 8, Nicholson discloses requesting that a computer system be placed in a

hibernation mode (refer to Figure 7, the system determines whether it is entering hibernation, this

determination is intrinsically in response to a stimuli of some sort requesting that the system

enters hibernation); writing a state of the system to a hard disk drive of the communication

system having a non-volatile memory cache (section [0010; lines 6+; the remote boot server

comprises a hard disk drive comprising a non-volatile memory cache); storing the state of the

system to the hard disk drive cache (section [0011]).

Regarding claim 9, Nicholson discloses requesting data from the cache to restore the state of the

system after hibernation (section [0010], lines 12+).

Regarding claim 10, Nicholson discloses a mobile computer system (section [0028]; a mobile

computer system is a computer system used in a mobile environment).

Regarding claim 11, Nicholson discloses a desktop computer system (section [0028 and 0050];

Nicholson discloses a computer system using a Windows operating system; such a system is a

desktop computer system).

Regarding claims 12, 19 and 30, Nicholson discloses requesting that a computer system having a

hard disk drive (section 0038, lines 17-20]) and a non-volatile memory (Figure 1, Reference 208)

coupled to (via References 170, 171, 121 and 222 in Figure 1) a hard disk drive (Figure 1,

Reference 183; the remote boot server contains a hard disk drive) of a mobile or desktop

computer (section 0028, lines 10+; section 0030) be placed in hibernation mode (refer to Figure

7, the system determines whether it is entering hibernation, this determination is intrinsically in

response to a stimuli of some sort requesting that the system enters hibernation); determining an

address location of the non-volatile memory and writing contents of a central processing unit to

the non-volatile memory (section [0052], lines 1-6; the system saves all information required to

restore the system, since the central processing unit performs all of the processing for the system

[section [0039], it is evident that the state of the cpu or contents of the cpu are required for

storage when the system hibernates in order to ensure that the processing unit may resume

processing. Additionally, since the non-volatile memory is a separate native device, [refer to

section [0041, lines 19+], it is evident that the address of such a device must be determined

before data is stored thereto). Nicholson discloses performing the above features by a personal

computer/CPU executing computer readable instructions [section [0028]).

Regarding claim 13, Nicholson discloses writing contents of an operating system to the non-

volatile memory (section [0050]).

Regarding claims 14 and 30, Nicholson discloses writing contents of a random access memory to

the non-volatile memory (section [0052], lines 1-12; the RAM stores data/programs presently

operated on and thus this information would be used prior to hibernation and thus would be

stored in the non-volatile memory, also refer to section [0028]).

Regarding claim 15, Nicholson discloses powering off the computer (Figure 7, step 708).

Regarding claims 16-18 and 32-33, Nicholson discloses awakening the computer system from

the hibernation mode and initiating a load sequence from the non-volatile memory to restore the

system to the contents of the central processing unit (Figure 9, step 806 and step performed

before 806; also refer to section [0028]).

Regarding claims 26-27, Nicholson discloses a hard disk drive (section 0038, lines 17-20) means

for storing a state of the computer to a non-volatile memory before power down (Figure 9,

Reference 802); means for loading the state of the computer from the non-volatile memory

(Figure 9, Reference 802).

Regarding claim 28, Nicholson discloses means for reducing power up time of the computer

after being placed in a hibernation mode (section [0023]; when the system loads the data from

non-volatile memory cache (Figure 1, Reference 208), the time to power up is reduced since the

system does not have to retrieve data from the network).

Regarding claim 29, Nicholson discloses reducing power consumption of the computer (when

the system power downs or is placed into hibernation mode).

Regarding claim 31, Nicholson discloses writing the contents to the hard disk drive using a

transparent write-through process (data written to the hard disk drive is written in the hard disk

drive's cache also and thus the write-through process is transparent to the computer connected to

the network, in that the computer writes the data to the remote boot server).

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

5.   Claims 20-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nicholson

(PGPUB: US 2004/0153694).

Regarding claims 20-21, Nicholson discloses a central processing unit (CPU) (Figure 1,

Reference 120); a main memory coupled to the CPU, wherein the memory stores data to be

manipulated by the CPU (Figure, Reference 130); a first non-volatile memory coupled to the

main memory, wherein the data of the main memory is stored to the first non-volatile memory if

the system is placed in hibernation mode (Figure 1, Reference 208; Figure 7, References 710 and

712); and a second non-volatile memory (Figure 1, Reference 182; the remote boot server

comprises a hard disk drive which is larger that the first the non-volatile memory) coupled to the

first non-volatile memory, wherein the second non-volatile memory has a greater storage

capacity that the first non-volatile memory (section [0042]), (section [0004]; the remote boot

server contains a hard disk drive and the smallest size of such a drive is 30 GB). Nicholson does

not disclose the first non-volatile memory has the same address configuration as the second non-

volatile memory. This concept is well known with cache memory and main memory

applications, wherein the cache and main memory having a same address configuration. This

feature allows data to written to the cache and the main memory during a write through process,

which ensures that the main memory will always be synchronized with the cache in the event of

failures. Nicholson discloses the use of the first and second memory to improve reliability in the

event of errors or failures and thus it would have been obvious to one of ordinary skill in the art

to incorporate this well known concept in the system taught by Nicholson for the desirable

purpose of improved reliability.

Regarding claim 22, Nicholson discloses restoring the state of the CPU when the system is

awoken from the hibernation mode (Figure 9, Reference 806).

Regarding claim 23, Nicholson discloses storing the data of the main memory and the state of the

CPU to the second non-volatile memory (Figure 7, Reference 714).

Regarding claim 24, Nicholson discloses a driver coupled to the main memory and the first non-

volatile memory, wherein the driver writes data of the main memory to the first non-volatile

memory (storage driver stack; section [0041], lines 23+; Figure 6, sections [0045] – [0046]).

Regarding claim 25, Nicholson discloses a mobile computer system (section [0028]; a mobile

computer system is a computer system used in a mobile environment).

Response to Arguments

6.   Applicant's arguments filed April 18, 2006 have been fully considered but they are not

persuasive.

Nicholson discloses storing static and dynamic configuration data [system state] to the NVM and

to the remote storage volume (sections [0051-0052]). Hence, the configuration data is stored to

both storage devices. It appears that Applicant is trying to claim that redundant copies of the

same data is stored to both storage devices. However, the claim language does not necessarily

require such. Claims are examined given the broadest reasonable interpretation. The claim

simply states storing system state data to both a first and second non-volatile memory.

Regarding Applicant's argument that the second non-volatile memory is remote and therefore is

not apart of the computer system is not an accurate assessment. A computer system, given the

broadest reasonable interpretation, is a configuration that includes all functional components of a

computer and its associated hardware. This interpretation does not imply where the components

are. Nicholson describes the computer system as comprising the components in Figure 1.

Conclusion

7.   Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

8.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Kimberly N. McLean-Mayo whose telephone number is 571-272-

4194. The examiner can normally be reached on Mon, Wed, Thurs (10-4), Tues (9:45 - 6:15).
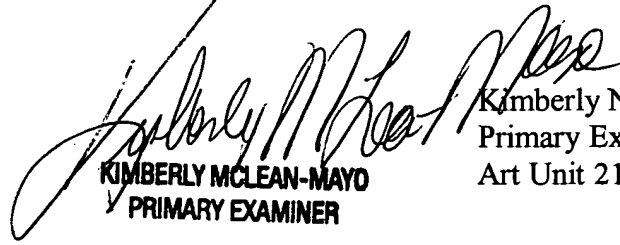
If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Donald Sparks can be reached on 571-272-4201. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Art Unit: 2187

Kimberly N. McLean-Mayo
Primary Examiner
Art Unit 2187

KNM

June 25, 2006